WHOLE BODY CONCENTRATION OF ^{137}CS, ^{85}SR AND ^{65}ZN FOR CHINESE MINNOW (*P. OXYCEPHALUS*) AND EARTHWORM (*E.ANDREI*)

DONG-KWON KEUM*, IN JUN, KWANG-MUK LIM, & YONG-HO CHOI

Korea Atomic Energy Research Institute (KAERI), 150 Deokjindong, Yuseonggu, Daejeon, 305-353, Republic of Korea, dkkeum@kaeri.re.kr

This paper discusses the whole body concentration ratio (CR) of ^{137}Cs, ^{85}Sr and ^{65}Zn for Chinese minnow (*P. oxycephalus*) and earthworm (*E.andrei*) that were experimentally measured in a laboratory in order to be used as input data for the radiation dose assessment of non-human species. Adult and youngish minnows were purchased from a commercial nursery, and they were bred together in a small aquarium (45cm x 85cm x 50cm) that contained the contaminated water spiked with 0.2, 0.1 and 0.2μCi/l of ^{137}Cs, ^{85}Sr and ^{65}Zn, respectively. The fish and water were sampled with time, and the whole body radionuclide activity of the fish was analyzed without distinguishing between organs. The measured whole body CRs of ^{137}Cs, ^{85}Sr, and ^{65}Zn for the Chinese minnow increased with time, and the value at 30 days after the start of experiment was 4.0 l/kg for ^{137}Cs, 12.6 l/kg for ^{85}Sr, and 11.8 l/kg for ^{65}Zn, respectively. The CR of ^{137}Cs was about three orders of magnitude less than that of the pelagic fish in the ERICA tool database, and the CR of ^{85}Sr was similar. The experiments to measure the CR for the earthworm are now on going. The soil to breed the earthworm was spiked with 12.5, 25 and 12.5μCi/dry-soil-kg of ^{137}Cs, ^{85}Sr and ^{65}Zn respectively. At the start of the experiment, about 1kg earthworm was uniformly distributed in a plexiglass box (30cm x 20cm x 60cm) that contained 20kg of the contaminated soil in each box. The outer surface of the plexiglass box was coated with a thin film of black color to prevent the worm from exposure to light. The earthworm and soil are being periodically sampled, and subsequently the time-dependent whole body CR values of the earthworm will be determined.